STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
PRIVATE NONPROFIT PROGRAM

I. *INDENTIFICATION OF APPLICANT*

A. Applicant Information

Gary Fandrei		Cook Inlet Aquaculture Assc.
Applicant Name		Organization
40610 Kalifornsky Beach Rd.		(907) 283-5761
Address		Phone Number
Kenai	Alaska	99611-9445
City	State	Zip

B. Hatchery Information

Tutka Bay Lagoon Hatchery	32
Hatchery Name	PNP Permit Number

II. *STATEMENT OF APPLICANT'S GOALS AND OBJECTIVES*

A. Describe the nature of the requested alteration, why you have decided to request it, and what you generally expect to accomplish by the expansion of your program, including answers to the following questions. Will the proposed project affect wild salmon stocks or existing fisheries? How will a significant contribution to common property fisheries be made? How will potential effects and interactions between introduced or enhanced stocks and wild stocks be assessed? What marking and recovery studies are being proposed that will allow the project to be evaluated? What are the potential benefits to fisheries or wild stocks from the proposed project? Has this project been discussed with the department's area or regional management biologists? (Attach additional pages as necessary.)

1) Resume pink salmon production at Tutka Bay Lagoon Hatchery by collecting broodstock and eggs from pink salmon returning to Tutka Creek, incubating, rearing and releasing resulting fry to Tutka Bay and Halibut Cove to provide additional fish for common property harvest, broodstock and hatchery cost recovery.
2) To collect broodstock and eggs from pink salmon returning to Port Dick, incubating, rearing and releasing resulting fry to Halibut Cove to provide additional fish for common property and cost recovery harvests while until the hatchery broodstock is developed.
3) Update language to correct errors and reflect current project status.

See attached documents:
TBLH PAR 2-15-11 Goals
TBLH PAR 2-15-11 BMP

III. ***IMPACTS ON EXISTING HATCHERY PROGRAM***

A. **Present Permitted Capacity**
(numbers of green eggs by species)

Pink	125,000,000	Coho	0
Chum	0	Chinook	0
Sockeye	660,000	Other	

B. **Capacity After Request**
(numbers of green eggs by species)

Pink	No change requested	Coho	No change requested
Chum	No change requested	Chinook	No change requested
Sockeye	No change requested	Other	

C. **Water Use**

1. **List the total amount of water available and the source.**

TBLH design water capacity:	1,200 gpm from Tutka Creek.

2. **List the amount of water presently being used.**

TBLH current water use:	1,080 gpm from Tutka Creek.

3. **List the additional amount of water needed for this alteration.**

TBLH increase in water use:	0 gpm from Tutka Creek.

IV. *HATCHERY DESIGN*

A. Please provide a detailed description of new facilities needed with this alteration (e.g., buildings, incubators, rearing space, piping, etc.). This description should represent a solid concept of the proposed hatchery changes/expansion. Drawings showing the layout of new structures should be attached when appropriate.

No alterations to TBLH are required to accommodate this change. Net pens for temporary rearing pink salmon fry will need to be placed in Halibut Cove

V. *DECLARATION AND SIGNATURE*

I declare that the information given in this application is, to my knowledge, true, correct, and complete.

Gary Fandrei for CIAA
Name of Applicant

2/13/11
Date Signed

Gary Fandrei
Signature of Applicant

TBLH PAR 2-15-11 - Statement of Goals and Objectives

Nature of the Requested Alteration:
This alteration request modifies the Tutka Bay Lagoon Hatchery (TBLH) Basic Management Plan (BMP) by:

1. Correcting typographical errors and updating language, and
2. Adding the collection of up to 120,000,000 pink salmon eggs from adult pink salmon returning to Port Dick, incubating those eggs at TBLH, short-term rearing the resulting fry in net pens in Halibut Cove Lagoon and releasing the fry to Halibut Cove Lagoon. All (100%) of the Port Dick stocks adult pink salmon returning to Halibut Cove will be harvested by CIAA for cost recovery or in the common property fishery. Egg takes from Port Dick pink salmon stocks and fry releases to Halibut Cove Lagoon will continue until TBLH's Tutka Creek brood source is fully developed. Once the TBLH broodstock is fully developed, eggs will not be collected from Port Dick, and
3. Establishing a Special Harvest Area in Halibut Cove.

This request does not increase the permitted egg capacity of TBLH nor does it require any modifications to TBLH.

Why is the Alteration Being Requested:
The purpose of this request is to:

1. Improve the economic benefit of the Lower Cook Inlet commercial and cost recovery pink salmon fisheries by resuming pink salmon production at TBLH, and
2. Support TBLH operations during hatchery pink salmon broodstock development by providing additional broodstocks for egg collection, incubation, rearing, release and harvest of returning adults

What is Expected to be Accomplished by the Alteration:
1. CIAA elected to suspend operations at TBLH in 2004. As a result of this decision, the hatchery broodstock was lost.
2. CIAA wishes to resume pink salmon operation at TBLH in 2011. When pink salmon operations become fully developed (i.e. hatchery broodstock can support full production), CIAA expects to annually produce up to 5 million adult pink salmon for common property and cost recovery harvests. At full production the estimated ex-vessel value of the adult pink salmon return will be as high as $4.8 million assuming an average fish weight of 3.2 lbs and a price of $0.30/lbs.
3. Support TBLH operations during brood source redevelopment by collecting up to 120,000,000 pink salmon eggs from Port Dick stocks, incubating those eggs at TBLH, short-term rearing the resulting fry in net pens in Halibut Cove Lagoon and releasing the fry to Halibut Cove. All (100%) adult pink salmon returning to Halibut Cove will be harvested by CIAA for cost recovery or in the common property fishery. CIAA expects to generate an adult pink salmon return to

Halibut Cove by the third year of resuming hatchery operations with a minimum ex-vessel value of $1 million.

Will the Alteration Affect Wild Salmon Stocks or Existing Fisheries:

1. Broodstock and gametes will be collected from surplus pink salmon returns to the Port Dick. The common property pink salmon harvest and escapements to Port Dick spawning systems will be maintained at historic levels.

   No change to the native stocks in Port Dick is anticipated.

   A wide variety of oceanic species occupy Lower Cook Inlet. No known problems exist with any of the populations and no effects are expected to the other oceanic stocks because of the egg take.

2. Port Dick broodstock fry will be released to and adults will return to Halibut Cove Lagoon. TBLH pink salmon (i.e Tutka Creek stock) have historically been released to and returned to Halibut Cove. There are no natural salmon runs returning to Halibut Cove, and the early July run timing of TBLH pink salmon (i.e.Tutka Creek) returning to this satellite rearing site provides adequate temporal separation to protect the adjacent Humpy Creek run, which occurs in late July and August. Port Dick pink stocks returning to this satellite site are not temporally separated from the Humpy Creek run. Management actions may be required to assure escapement goals to Humpy Creek are met.

   No change to the native stocks in Halibut Cove is anticipated.

   A wide variety of oceanic species occupy Kachemak Tutka Bay. No known problems exist with any of the populations and no effects are expected to the other oceanic stocks.

What Contribution will the Alteration Make to the Common Property Fisheries:

1. This alteration is expected to resume pink salmon operations at TBLH and will maintain adult pink salmon returns at historic levels. The fish will be available to the common property fishery - to commercial, sport, personal use, subsistence, and cost recovery harvest in Tutka Bay, Halibut Cove and Kachemak Bay. Once full pink salmon production is attained, CIAA anticipates at least ½ of the adult return will be available for common property harvest.

2. This alteration will produce a pink salmon return to Halibut Cove while the TBLH broodstock is being developed providing CIAA with the opportunity to conduct harvests to recover the costs of reopening TBLH. CIAA cost recovery harvests during broodstock development will result in reduce cost recovery harvests in Tutka Bay once TBLH becomes operational.

How Will Effects and Interactions between Introduced and Wild Stocks be Assessed:

1. Returning fish will primarily be harvested in terminal cost recovery and commercial fisheries. No change to the native stocks is anticipated. The use of a Port Dick pink salmon stocks returning to Halibut Cove are not temporally separated from the Humpy Creek run. Management actions may be required to assure escapement goals to Humpy Creek are met.

   CIAA will work with ADF&G to assess any potential unexpected effects and/or interactions that may arise in the future. Assessment studies will be defined in the Annual Management Plan.

2. TBLH currently does not have a mass fry marking system in place. CIAA will investigate and install a suitable mass marking system as soon as funds become available.

   Once a mass marking system in place, CIAA will work with ADF&G to assess any potential unexpected effects and/or interactions that may arise in the future. Assessment studies will be defined in the Annual Management Plan.

What Marking and Recovery Studies are Being Proposed:

1. Once TBLH full production is attained, all pink salmon fry released from TBLH will be marked and the contribution of adult fish to other fisheries may be determined.

2. Harvests as reported by ADF&G will be used to determine the magnitude of the adult return.

3. Additional assessment studies will be defined in the Annual Management Plan.

What are the Potential Benefits to Fisheries or Wild Stocks:

1. CIAA's goal is to resume pink salmon production at TBLH at historic levels. Providing an adult return for cost recovery harvest at Halibut Cove will decrease the number of years CIAA must operate TBLH before adult returns to TBLH are sufficient to provide broodstock and a cost recovery harvest. Additional CIAA cost harvest opportunity will decrease the number of fish harvested by CIAA later and at other lower Cook Inlet enhancement projects making more fish available for harvest in commercial, sport and personal use fisheries.

   There are no clearly defined benefits to wild stocks that result from resuming pink salmon production at TBLH or Halibut Cove; however, by providing harvest opportunities on stocked fish, harvest efforts on wild stocks may be reduced.

Has the Project been Discussed with the Area and/or Management Biologist:

1. Resuming pink salmon production at TBLH and Halibut Cove has been discussed with ADF&G's Management biologists and has been the topic of several Regional Planning Team meetings. The current PAR is the result of those discussions.

TUTKA BAY LAGOON HATCHERY BASIC MANAGEMENT PLAN

1.0 INTRODUCTION

Tutka Bay Lagoon Hatchery (TBLH) is owned by the State of Alaska and operated by the Cook Inlet Aquaculture Association (CIAA). The facility was built in 1975 to produce pink and chum salmon for release at the facility and at selected remote sites in Lower Cook Inlet. In 1994, production of chum salmon was removed and the production of sockeye salmon was added.

CIAA elected to suspend operations at TBLH in 2004. ~~Owned by the State of Alaska and operated by Cook Inlet Aquaculture Association (CIAA), Tutka Lagoon Hatchery (Tutka) produces pink salmon fry and sockeye salmon smolt for release at the facility and pink salmon fry for release at selected remote sites in Lower Cook Inlet.~~

TBLH net pens are used for the short-term rearing and release of sockeye salmon by Trail Lakes Hatchery.

1.1 Production Limitations

Up to 125 million pink salmon eggs may be incubated each year. ~~Up to 660 thousand sockeye salmon eggs may be incubated each year in order to produce up to 330 thousand smolt. Sockeye smolt production is limited by Upper Inlet fisheries management concerns and not facility capacity.~~

1.2 Goals

The Tutka program exists to make ~~up to 5 million~~additional adult pink salmon ~~and up to 66 thousand adult sockeye salmon available to common property fisheries~~ for harvest in Lower Cook Inlet each year.

1.3 Objectives

The long term objective of hatchery operations is to ~~A~~annually collect up to 125 million pink ~~and 660 thousand sockeye~~ salmon eggs, release an average of 100 million pink salmon fry ~~and 330 thousand sockeye salmon smolt~~, experience returns of 5 million adult pink salmon ~~and 66 thousand adult sockeye salmon~~, produce revenues from harvest and sale of returning fish that are at least equal to costs of hatchery operation and operate efficiently so that at least ~~2/3~~1/2 of the fish are harvestable by common property fisheries.

2.0 HATCHERY OPERATIONAL CONSIDERATIONS

2.1 Facility Design

Process water is pumped from Tutka Creek to a settling tank/reservoir. ~~A weir will be seasonally installed in Tutka Creek to limit access by sockeye salmon to that portion of the creek downstream from the hatchery water supply.~~ Water flows from the reservoir through incubators and raceways. Process water effluent is released into Tutka Creek. Juvenile salmon and freshwater can be moved by pipeline to the net pen complex in Tutka Bay Lagoon for rearing, loading into transport vessels or release.

The facility operates on commercial electrical power with standby diesel generation capability. Pink salmon incubation capacity is 125 million eggs using Nopad LZ-40 stacked incubators. Rearing of pink salmon fry will take place in floating net pens ~~anchored~~ secured in Tutka Bay Lagoon and at other sites remote from the hatchery.

~~Sockeye salmon incubation capacity is 660 thousand eggs using "Kitoi" incubators. Initial rearing will take place in fry starting troughs and indoor concrete raceways. Final rearing will take place in floating net pens anchored in Tutka Lagoon.~~

2.2 Fish Cultural Considerations

Pink salmon broodstock will be captured from Tutka Bay or other approved location, transported live to ~~held for ripening in~~ Tutka Bay Lagoon net pens for ripening or spawned immediately using standard procedures if sexually mature. As adults mature in the Tutka Bay Lagoon net pens they will be spawned using standard procedures. All ~~E~~eggs will be fertilized and water hardened either prior to or after transfer to the hatchery building. Standard incubation techniques will be utilized.

Emergent pink salmon fry will be released unfed or transferred (pipeline, tanked vessel) to net pen locations. Fry will be reared in net pens for up to ~~6~~ 12 weeks prior to release.

~~Sockeye salmon egg collections will be conducted at sites remote from Tutka Lagoon in accordance with ADF&G Sockeye Salmon Culture Policy. Ripe fish will be killed and surface disinfected prior to gamete removal. Every attempt shall be made to attain a 1:1 sex ratio during fertilization. Spawn takers shall disinfect their hands or gloves, and work area after each fish is spawned.~~

~~Iced coolers of sockeye eggs and milt in individual containers will be transported to the hatchery by boat, aircraft and pick up truck. All containers shall be disinfected prior to admission into the facility. Single family delayed fertilization and water hardening disinfection techniques shall be used.~~

~~Equipment, crew clothing and other instruments or accessories utilized at spawning locations shall be kept separate and will be disinfected according to methods prescribed by ADF&G Sockeye Salmon Culture Policy.~~ Broodstock ~~C~~carcasses will be sold, given away or discarded into the water body from which they were removed.

2.3 Stock Separation and Release Plans

All pink salmon incubators in a stack will contain eggs from ~~the same stock of fish~~either Tutka Creek, TBLH returns or Port Dick. There shall be no reuse of water between incubator stacks.

Each net pen shall contain fry from ~~a single stock~~either Tutka Creek, TBLH returns or Port Dick. Fry from Port Dick will be temporarily held in net pens in Tutka Bay Lagoon prior to transfer to Halibut Cove/Lagoon for short-term rearing and release.

Release sites for Tutka Creek and TBLH returns pink salmon fry are Tutka Bay, Tutka Bay Lagoon, Halibut Cove Lagoon and Homer Spit. The release site for Port Dick pink salmon fry is Halibut Cove Lagoon. Tutka Creek and TBLH returns pink salmon fry will not be released to Halibut Cove coincidently with Port Dick pink salmon fry.

CIAA will attempt to coordinate releases of pink salmon fry with increasing zooplankton densities in nearby marine waters.

~~Incubation of sockeye salmon eggs will take place in Kitoi incubators located in a module separate from pink salmon incubators. There will be no reuse of water between incubators.~~

~~Initial rearing of sockeye will take place in troughs located in the sockeye module. Fed sockeye fry will be transferred to indoor concrete raceways for long term rearing. Groups of indoor raceways shall be separated by barrier if more than one stock is being reared. There will be no reuse of water between rearing units. Each rearing unit shall be provided with separate utensil sets. There shall be no interchange of utensils between rearing units.~~

~~Yearling sockeye will be transferred from indoor raceways to net pens in Tutka Lagoon as early in the spring as ice conditions allow. Each net pen shall contain yearlings from a single stock. Yearling sockeye will be reared in net pens until release in June.~~

3.0 BROODSTOCK CONSIDERATIONS

3.1 Development Schedule

Up to 125 million pink salmon eggs may be collected. Maximum production requires about 84,000 female and 28,000 male pink salmon broodstock. ~~Up to 660 thousand sockeye salmon eggs may be collected.~~

Prior to 2004, facility returns of pink salmon were well established. Pink salmon have not returned to the facility since 2005.

To resume pink salmon production at TBLH, CIAA will redevelop the hatchery broodstock as quickly as possible. CIAA projects hatchery pink salmon returns will be sufficient to supply 125 million pink salmon eggs for hatchery operations in the third year of resuming operations if eggs can be secured from at least 5,300 surplus pink salmon in the first and second years of resuming operations. If eggs are secured from fewer than 5,300 pink salmon, hatchery broodstock development will be extended and may not be complete until the eighth year of resuming operations.

Once the hatchery broodstock in developed, adult pink salmon returning to TBLH will be the brood source for future operations. CIAA will collect up to 125 million pink salmon eggs from hatchery pink salmon returns, incubate those eggs at TBLH, short-term rear the resulting fry in net pens in Tutka Bay Lagoon, Halibut Cove Lagoon or other approved site and release the resulting fry to Tutka Bay Lagoon, Halibut Cove Lagoon or other approved site. The number of fry released to Tutka Bay Lagoon will be sufficient to provide an adult pink salmon return to assure future egg take goals are met.

The following table projects hatchery broodstock development for resuming hatchery operations beginning in 2011. Annual broodstock requirements, however, may vary depending on pink salmon returns to Tutka Creek and may be extended up to 2019 if returns to Tutka Creek are inadequate to support the initial broodstock project goals. Annual broodstock goals will be identified in the TBLH Annual Management Plans.

Tutka Creek Broodstock Requirements

Egg Take			Release			Return		
Number	Brood Source	Year	Number	Location	Year	Number	Location	Year
5,000,000	Tutka Creek	2011	3,500,000	TBL	2012	105,000	TBL	2013
5,000,000	Tutka Creek	2012	3,500,000	TBL	2013	105,000	TBL	2014
75,000,000	TBL	2013	52,500,000	TBL	2014	1,575,000	TBL	2015
75,000,000	TBL	2014	52,500,000	TBL	2015	1,575,000	TBL	2016
125,000,000	TBL	2015+	43,750,000	TBL	2016+	1,312,500	TBL	2017+
			43,750,000	Halibut Cove		1,312,500	Halibut Cove	

CIAA will support TBLH operations during broodstock development by collecting up to 120 million pink salmon eggs from adult returns to Port Dick, incubating those eggs at TBLH, short-term rearing the resulting fry in net pens in Halibut Cove Lagoon and releasing the fry to Halibut Cove Lagoon. Surplus adult pink salmon returning to Port Dick will be live captured, spawned on site if sexually mature or transported to Tutka Bay Lagoon, and placed in the net pens for ripening. To assure adequate eggs are available for supporting hatchery operations during broodstock development, CIAA may also purchase live adult pink salmon returning to Port Dick from the fleet.

Each net pen shall contain broodstock from either Tutka Creek or Port Dick.

All (100%) Port Dick stock adult pink salmon returning to Halibut Cove will be harvested by CIAA for cost recovery or in the common property fishery.

Egg takes from Port Dick and fry releases to Halibut Cove will continue for up to eight years or until the TBLH brood source is adequate to support hatchery operations at full production. The number of eggs collected from Port Dick will vary each year and will be based on the number of eggs collected from Tutka Creek and returns to TBLH. The total combined number of eggs collected from Tutka Creek, TBLH returns and Port Dick in any year will not exceed 125 million.

The following table projects Port Dick broodstock requirements during hatchery broodstock developement. Annual broodstock requirements, however, may vary depending on returns to Tutka Creek and may be extended up to 2019 if returns to Tutka Creek are inadequate to support initial hatchery broodstock goals. Annual broodstock needs will be identified in the TBLH Annual Management Plans.

Island Creek, Head End Creek or Other Return to Port Dick Broodstock Requirements

Egg Take			Release			Return		
Number	Brood Source	Year	Number	Location	Year	Number	Location	Year
120,000,000	Port Dick	2011	84,000,000	Halibut Cove	2012	2,520,000	Halibut Cove	2013
120,000,000	Port Dick	2012	84,000,000	Halibut Cove	2013	2,520,000	Halibut Cove	2014
72,500,000	Port Dick	2013	50,750,000	Halibut Cove	2014	1,522,500	Halibut Cove	2015
72,500,000	Port Dick	2014	50,750,000	Halibut Cove	2015	1,522,500	Halibut Cove	2016

3.2 Donor Sources

~~Facility returns of pink salmon have been well established.~~ The original donor brood source for TBLH was Tutka Creek.

CIAA will redevelop the Tutka Creek pink salmon brood source by collecting all the eggs that are available from surplus pink salmon returning to Tutka Creek, incubating those eggs at TBLH, short-term rearing the resulting fry in net pens in Tutka Bay Lagoon and releasing the fry to Tutka Bay Lagoon.

CIAA will maintain TBLH operations after the Tutka Creek brood source is developed by collecting up to 125 million pink salmon eggs from Tutka Bay Lagoon incubating those eggs at TBLH, short-term rearing the resulting fry in net pens in Tutka Bay Lagoon, Halibut Cove Lagoon or other approved site and releasing the fry to Tutka Bay Lagoon, Halibut Cove or other approved site. The number of fry

released to Tutka Bay Lagoon will be sufficient to provide an adult pink salmon return sufficient to assure future egg take goals are met.

Once hatchery broodstock is developed and broodstock are no longer being collected from Port Dick and adult pink salmon are no longer returning from Port Dick broodstock, ~~S~~should Tutka Lagoon provide insufficient pink salmon broodstock due to run failure, eggs may be collected from Tutka stock returns to Halibut Cove ~~Lagoon~~.

A key requirement for successfully resuming pink salmon production at TBLH is the short-term collection of eggs from adult pink salmon returning to Port Dick and the release of the resulting fry to Halibut Cove Lagoon for cost recovery harvest. Cost recovery harvest provides the funding required for developing the Tutka Creek brood source and returning TBLH to full production.

CIAA will collect as many eggs as possible, up to 120,000,000 eggs, from surplus adult pink salmon returning to Island Creek, Head End Creek or other pink salmon returns to Port Dick. Eggs will only be collected from those pink salmon escaping the common propoerty fishery and surplus to escapement needs. To assure adequate eggs are available for supporting hatchery operations during broodstock development, CIAA may purchase live adult pink salmon returning to Island Creek, Head End Creek or other pink salmon returning to Port Dick from the fleet.

CIAA projects the broodstock needs from Port Dick will be up to 120,000 fish during the first two years of resuming hatchery operastions (2011 and 2012). The number of broodstock collected from Port Dick will vary each year and will be based on the number of broodstock collected from Tutka Creek and returns to TBLH. The total combined number of eggs collected from Tutka Creek, TBLH returns and Port Dick in any year will not exceed 125 million.

CIAA will contract with a LCI seiner or seiners to capture broodstock and transport them to Tutka Bay Lagoon or Port Dick for maturation. Captured broodstock will be placed in the transport boat's hold. Seawater will be recirculated in the hold and aeration provided during transport. CIAA expects transport to be completed in less than 12 hours. The number of fish placed in the hold will be limited to assure good survival upon delivery to Tutka Bay Lagoon or Port Dick. Broodstock will be held in net pens or within a barrier seine until ripe. Each net pen shall contain broodstock from either Tutka Creek or Port Dick.

~~Sockeye salmon eggs may be provided from Packers Lake stock. Packers Lake is a site of a long established CIAA enhancement project which typically experiences surplus escapement (see Trail Lakes Hatchery Basic Management Plan for further discussion of Packers Lake sockeye).~~

~~Additional sockeye salmon stocks may be made available for use through approval of fish and egg transport permits.~~

3.3 Egg Removal Schedule

~~If pink salmon returns to Tutka Lagoon are less than 4,000 fish, none may be used for hatchery broodstock. If returns are 4,000 to 36,000, the number of returning fish minus 4,000 and the result divided by 2 may be used for broodstock. If returns are greater than 36,000 all fish in excess of 20,000 may be used for broodstock.~~Brood from Tutka Creek will be collected in accordance with the following egg take removal schedule. Special efforts will be made to release unharmed any Dolly Varden trout captured during broodstock collection.

TUTKA CREEK PINK SALMON BROOD COLLECTION SCHEDULE

Total Number of Tutka Creek Pinks Returning:	Escapement allowed into Tutka Creek:	Hatchery Broodstock Allocation:
Less than 6,500	100%	0
6,500 – 27,500	First 6,500, plus 50% of fish in excess of 6,500, until 17,000 fish total escapement is reached	50% of fish in excess of 6,500
More than 27,500	17,000	Remainder

Brood from adult pink salmon returning to Island Creek, Head End Creek or other pink salmon returns to Port Dick will be collected from those pink salmon escaping the common propoerty fishery and surplus to escapement needs. The Alaska Department of Fish and Game will set the specific egg take removal schedule and it will be described in the TBLH Annual Management Plan.

4.0 HARVEST MANAGEMENT CONSIDERATIONS

4.1 Management of Common Property Fisheries

Tutka Bay Lagoon Salmon Returns: The Tutka pink salmon stock returns from June 25 to August 20 with a historical peak from July 10-15. This run is primarily harvested by purse seine vessels in Tutka Bay Subdistrict and by set gill nets in

Barabara Creek Subdistrict. However, set gill nets have historically used large mesh gear to target on sockeye salmon transiting the area.

Past fishery performance has shown that two regular 48-hour fishing periods per week up to the mouth of Tutka Lagoon still allows 15-25 percent of the entire return to escape the fishery. Consequently, fishing time has been increased to five consecutive days per week since 1988.

Based on the development schedule, at maximum production ~~Tutka~~ TBLH could be expected to produce approximately 5 million adult pink salmon. This estimate assumes 125 million eggs and 5% survival. ~~In past years, pink salmon production utilizing short-term rearing techniques at this facility has demonstrated average survival rates of 5%. The proposed increase in hatchery production to 125 million eggs could result in a five-fold increase in adult returns over current production levels.~~

~~Packers Lake stock sockeye salmon smolt released in Tutka Lagoon will return as adults primarily from mid-July to mid-August with a peak around August 1. At maximum production, the Tutka Lagoon sockeye smolt releases could be expected to produce about 66,000 adult sockeye. These fish would be harvested in the same areas as pink salmon returning to Tutka.~~

Wild stock management concerns: Natural pink salmon stocks originating in Barabara Creek are incidentally harvested in Tutka Bay Subdistrict. Although there is a historic escapement goal of 18-24,000 for this system, the creek is a relatively minor producer (inconsistent and prone to flooding), with escapements averaging only 3,500 for the last 30 years. Marine waters surrounding Barabara Creek have been defined as a unique subdistrict which has remained closed to purse seining for the past several years (Figure 1). Limited protection of pink salmon from set gill nets operating on the east side of Barabara Creek is provided by the 5-inch mesh size commonly used to target on larger sockeye salmon bound for Upper Cook Inlet. More aggressive purse seining effort targeting Tutka pink and Tutka Lagoon sockeye stocks in the outer areas could result in higher incidental catches of Barabara Creek fish, further straining this depressed stock.

Halibut Cove Pink Salmon Returns: Harvest of pink salmon returning to the Halibut Cove Lagoon remote release site will primarily occur in Halibut Cove Subdistrict (Figure 2). This area opens to seining approximately June 25 on a five-day-per-week schedule, but Halibut Cove Lagoon will remain closed to commercial fishing until July 5. Delaying the fishery inside the lagoon will help reduce conflicts with the recreational fishery that targets on the enhanced chinook salmon run, yet still provide for a timely harvest of fresh fish.

It should be noted that pink salmon returning to this project are also harvested by set gill nets in Halibut Cove as well as purse seines in the China Poot Subdistrict.

There are no natural salmon runs returning to Halibut Cove, and the early July run timing of Tutka Creek pinks returning to this satellite rearing site provides adequate temporal separation to protect the adjacent Humpy Creek run, which occurs in late July and August. Port Dick pink stocks returning to this satellite site are not temporally separated from the Humpy Creek run. Management actions may be required to assure escapement goals to Humpy Creek are met.

4.2 ~~Tutka Bay~~ Special Harvest Areas

~~Within the Southern District of Lower Cook Inlet, the Tutka Bay SHA consists of all marine waters of the Tutka Bay Subdistrict southeast of the Homer Electric Association powerline crossing, including Tutka Bay Lagoon~~ Tutka Bay SHA - The Tutka Bay SHA consists of the marine waters of the Tutka Bay Subdistrict in the Southern District southeast or inshore of line from 59°30.23' N. lat., 151°28.23' W. long. to 59°28.63' N. lat., 151°30.37' W. long., including waters of Tutka Bay Lagoon (Figure 3). CIAA may harvest salmon within the Tutka Bay SHA using purse seine gear to generate revenues to offset operational costs. The SHA will be opened and closed by emergency order.

Halibut Cove SHA – The Halibut Cove SHA consists of the marine waters of the Halibbut Cove Subdistrict in the Southern District east or inshore of line from 59°35.56' N. lat., 151°11.87' W. long. to 59°37.62' N. lat., 151°11.96' W. long., including waters of Halibut Cove Lagoon (Figure 4). CIAA may harvest salmon within the Halibut Cove SHA using purse seine gear to generate revenues to offset operational costs. The SHA will be opened and closed by emergency order.

4.3 Special Harvest Area Management

Tutka Bay SHA - ADF&G is responsible for management of ~~Tutka Hatchery~~TBLH returns. CIAA will establish an annual revenue goal based on the operational cost of the TBLH ~~Tutka Hatchery~~ and any associated ~~evaluation projects~~costs including the establishment of a reserve. Each year the ~~portion of the Tutka Bay Subdistrict southeast of a line between the "rock quarry" (59° 30' 14" N. lat., 151° 28' 14" W. long.) and "Tutka Bay Lodge" (59° 28' 31" N. lat., 151° 28' 55" W. long.)~~ Tutka Bay SHA will close to commercial fishing by emergency order June 25 through August 20 or until such time as creek escapement, hatchery broodstock and hatchery revenue goals are met.

Halibut Cove SHA - ADF&G is responsible for management of TBLH returns. CIAA will establish an annual revenue goal based on the operational cost of the TBLH and any associated costs including the establishment of a reserve. Each year the Halibut Cove SHA will close to commercial fishing by emergency order June 25 through August 20 or until such time as hatchery broodstock and hatchery revenue goals are met.

5.0 SPECIAL RESEARCH AND OPERATIONAL REQUIREMENTS

5.1 Run Performance Data

To facilitate management of returns, CIAA, will collect and provide daily to ADF&G Commercial Fisheries staff in Homer, information on adult salmon returns to Tutka Lagoon including number of sales fish taken, number of brood fish taken, sex ratios of the daily harvest, and other information as necessary.

Increased management costs associated with future remote releases, such as catch sampling, tag recovery and escapement monitoring, will be identified and become an integral part of any cost/benefit evaluation. CIAA will help support those Department programs necessary to ensure' proper management of all salmon stocks affected by remote hatchery release.

5.2 Wild Stock Protection

For the protection of wild stock production in the hatchery or remote release areas, or stocks migrating through those areas, CIAA will help support Department programs as required to evaluate hatchery performance, monitor wild stock escapements, monitor fleet distribution and evaluate information relating to the hatchery returns. The evaluation of hatchery returns will include thermal marking of all released fish by the fifth year of resuming hatchery operations.

6.0 APPROVAL

The Basic Management Plan for Tutka Lagoon Hatchery is hereby approved.

~~Charles P. Meacham~~David Bedford Date
Deputy Commissioner
Alaska Department of Fish and Game

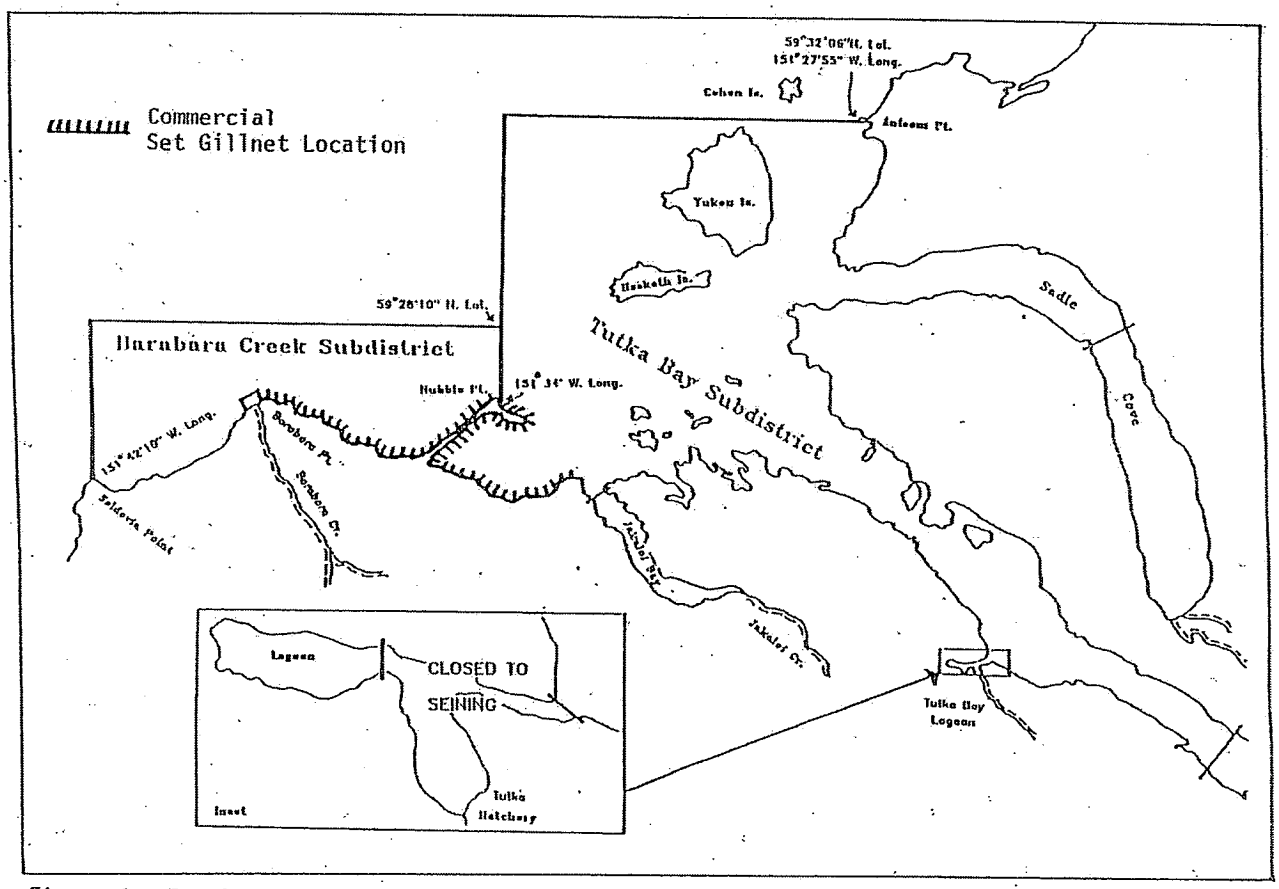

Figure 1. Barabara Creek and Tutka Bay Subdistricts of the Lower Cook Inlet Management Area.

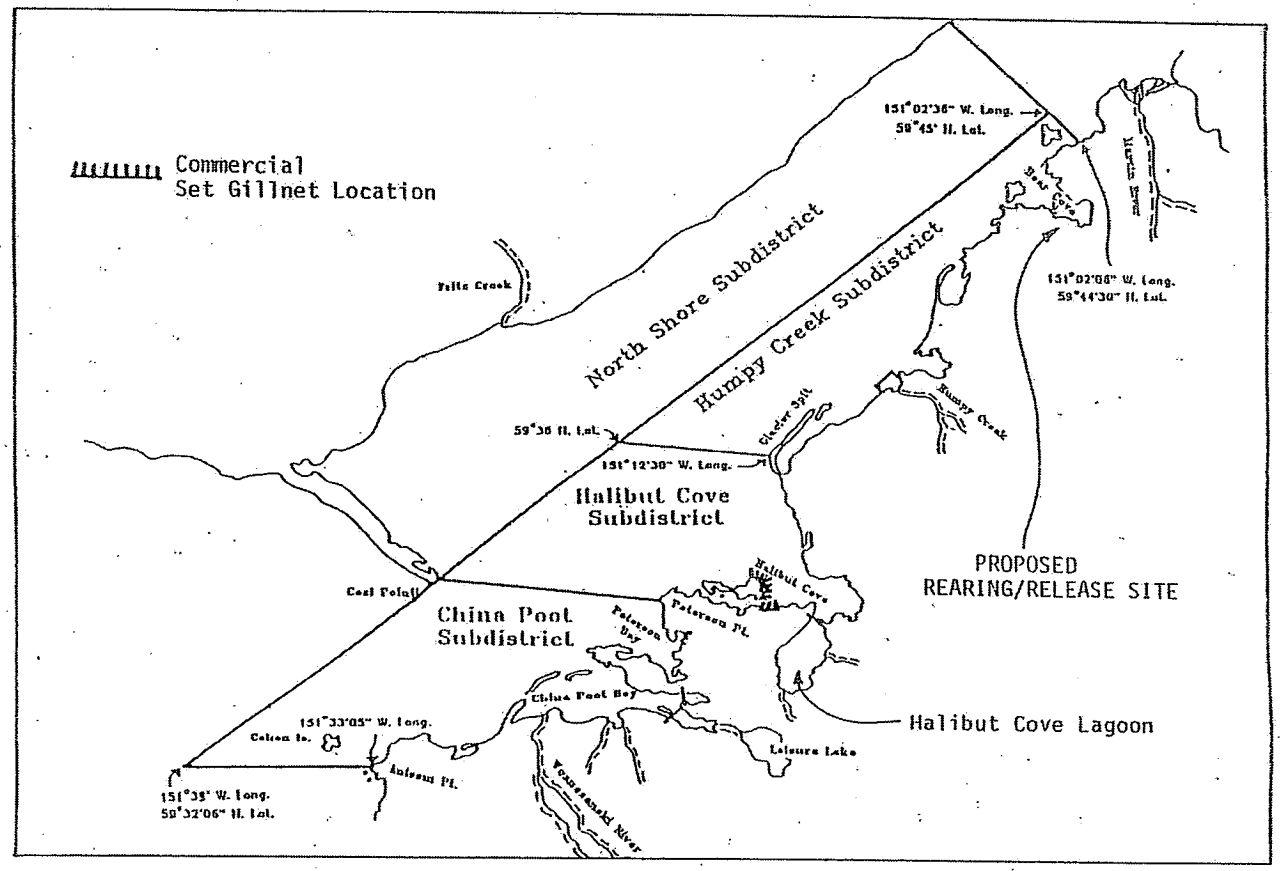

Figure 2. Subdistricts of the Southern District of the Lower Cook Inlet Management Area.

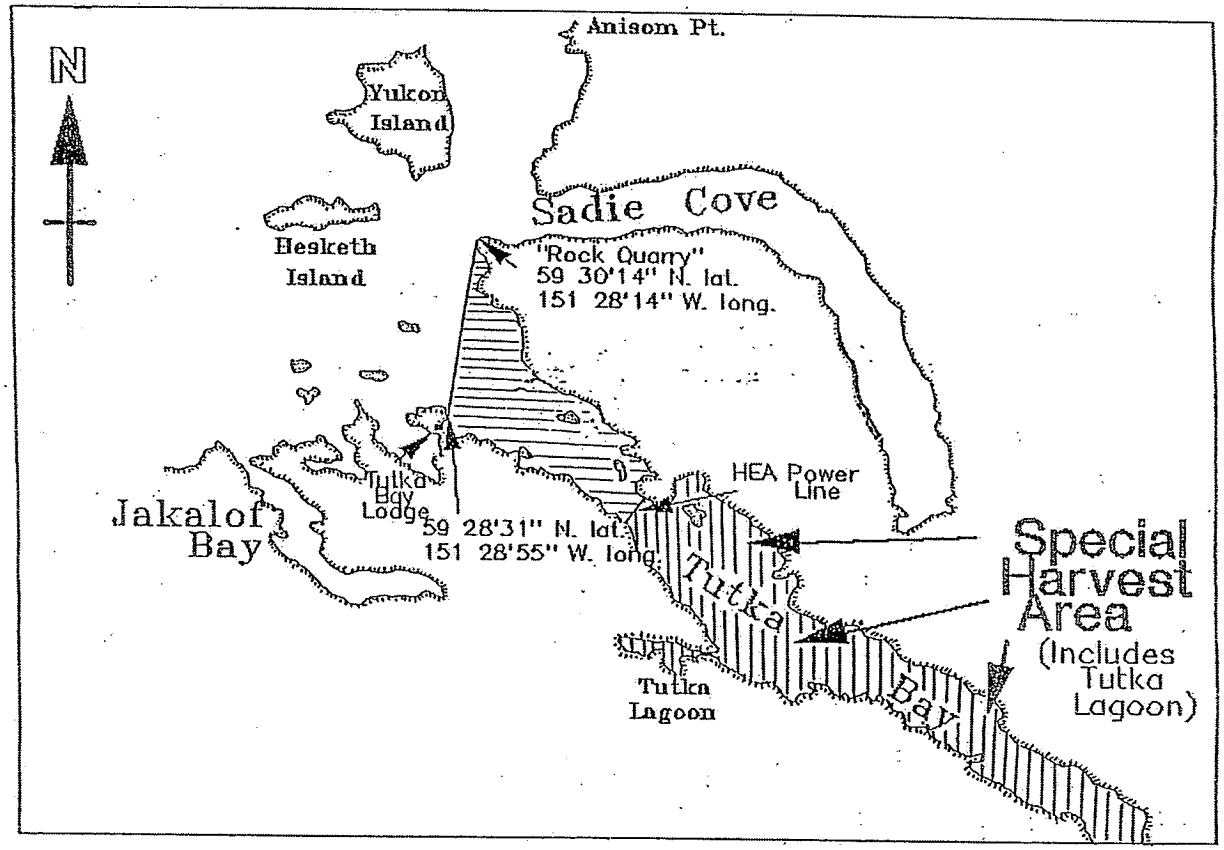

Figure 3. Tutka Bay Special Harvest Area, Southern District of Lower Cook Inlet.